

Remarks

Reconsideration of this application as amended for prosecution is respectfully requested.

The Examiner objected to claim 6 because of a typographical error. Claim 6 has been amended to correct typographical errors.

Claim 7 has been amended to correct a punctuation error.

The Examiner rejected claims 1-10 and 17-19. Claims 1-10 and 17-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,131,140 of Zimmer (“Zimmer”) in view of U.S. Patent 5,428,506 of Brown (“Brown”). In addition, the Examiner rejected claim 17 under 35 U.S.C. § 112, second paragraph, as being indefinite.

Applicants respectfully submit that amended claim 1 is not obvious under 35 U.S.C. §103(a) because of Zimmer and Brown. Claim 1 includes the limitations:

a power layer, wherein the power layer has n plane splits, wherein n is an integer greater than or equal to one, wherein a lossy material fills each of the n splits; and
a ground layer.

(Amended claim 1) (emphasis added).

Zimmer discloses placing copper strips on the surface of split planes (Zimmer, column 3, lines 3-48). The copper strips are electrically connected to the split plane through vias. Conductive tape is used to electrically connect the copper strips. In other words, Zimmer discloses electrically connecting the two sections of a split plane with a conductive tape. Zimmer does not disclose filling

the split plane with a lossy material. Brown discloses placing a lossy material layer between a copper plane and a ground plane (Brown, figure 1).

It is respectfully submitted that Zimmer does not teach or suggest a combination with Brown and that Brown does not teach or suggest a combination with Zimmer. It would be impermissible hindsight based on applicants' own disclosure to incorporate the lossy material layer of Brown into the method of connecting sections of a split plane of Zimmer. Moreover, such a combination would still lack a power layer having a plurality of split planes filled with a lossy material.

Given that claims 2-10 depend from claim 1, applicants submit that claims 2-10 are not obvious under § 103(a) in view of the references cited by the Examiner.

Applicants respectfully submit that amended claim 17 is not indefinite under 35 U.S.C. § 112 and is not obvious under 35 U.S.C. § 103(a). Claim 17 has been amended to include the following limitations:

means for providing a high frequency return path
in a first layer of a printed circuit board; and
means for reducing radiation from plane splits in a
second layer of the printed circuit board.

(Amended claim 17) (emphasis added).

In contrast, Zimmer and Brown do not disclose a means for providing a high frequency return path in a layer of a printed circuit board. Zimmer discloses connecting sections of split planes using conductive tape and then testing the electromagnetic properties of the connections. (Zimmer, column 1, lines 36-52). Brown discloses a laminate of lossy material to suppress common mode noise

(Brown, column 2, lines 33-42).

It is respectfully submitted that Zimmer does not teach or suggest a combination with Brown and that Brown does not teach or suggest a combination with Zimmer. It would be impermissible hindsight based on applicants' own disclosure to incorporate the circuit board EMI suppressor of Brown into the method for evaluating plane splits of Zimmer. Moreover, such a combination would still lack a means for providing a high frequency return path in a first layer of a printed circuit board and a means for reducing radiation from a second layer of the printed circuit board.

Given that claims 18-19 depend from claim 17, applicants submit that claims 18-19 are not obvious under § 103(a) in view of the references cited by the Examiner.

Respectfully submitted,
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